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The District of Columbia Emergency Response Team (CERT) Program:

**Can the Network Centric Operations Conceptual Framework Be
Extended to a Local Homeland Security Program?**

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The District of Columbia (DC) Community Emergency Response Team (CERT) Program:

Can the Network Centric Operations Conceptual Framework Be Extended to a Local Homeland Security Program?

Abstract

The September 11th terrorist attacks underscored the vulnerabilities of America's critical infrastructure. These attacks revealed how the network of government officials and first responders can be easily overwhelmed when terrorist attacks outstrip the capability of their resources. These attacks have the potential to break the links connecting ordinary citizens to first responders and their local governments. Breaking these links has the potential to lead to increased casualties and chaos. This paper explores the Washington, DC Community Emergency Response Team (CERT), a local Homeland Security (HLS) program that teaches ordinary citizens how to respond to significant terrorist attacks/natural disasters. This program fills a necessary link between the DC Government, professional first responders, and ordinary citizens. CERT teaches its members how to respond to terrorist attacks/natural disasters in their neighborhoods before professionals arrive, how to assist first responders once they arrive on the scene, and how to function as a link between ordinary citizens and government officials. This paper explores how well CERT functions in this "network" and whether it functions as an organization that uses Network Centric Operations (NCO). It also analyzes whether CERT members can effectively achieve collaboration and whether they are able to function effectively before professional first responders arrive.

Introduction

Local Government and disaster-relief organizations will try to help you but there are many times they cannot reach you after a disaster—It's a Disaster!

Local government prepares for everyday emergencies. However, during a disaster, the number and scope of incidents can overwhelm conventional emergency services. The Community Emergency Response Team (CERT) program is an all-risk, all-hazard training. This valuable course is designed to help you protect yourself, your family, your neighbors, and your neighborhood in an emergency situation—CERT LA Web Site

In the aftermath of the September 11th terrorist attacks, the issue of Homeland Security (HLS) has become a primary concern of policymakers and key actors in both the military and in the local law enforcement/first responder sectors. With the threat of attacks on the homeland increasing it is essential to incorporate the local citizen into HLS processes.

This process inevitably involves integrating these citizens into the disaster response plans designed by local governments, law enforcement, and first responder organizations. This integration requires developing new organizational approaches, improving current organizational processes, creating new networks/systems to share information, and unifying these elements together. Inherently these processes require collaboration, shared understanding, and situational awareness.

The Network Centric Operations Conceptual Framework (NCO CF) strives to improve military effectiveness by applying information-age technologies and pairing them with changes in organizations and their processes. By innovating technologically and transforming organizational design and processes, increases in operational effectiveness and performance should follow¹. The

tenets of Network Centric Warfare (NCW) argue that robustly networked military forces will facilitate better information sharing. Furthermore, through collaboration and sharing of information, these forces will achieve better shared situational awareness. This process of collaboration will lead to better information. The process of shared situational awareness facilitates the process of shared understanding. In turn shared understanding leads to self-synchronization. Self-synchronization provides significant increases in mission effectiveness².

Designed initially for defense operations and military-related concepts, this paper will apply these concepts to a local Homeland Security (HLS) Program, the DC Community Emergency Response Team (CERT). This paper will ask the following research questions: **Can the principles of Network Centric Operations extend from the military level to local governments, law enforcement, first responders, and ultimately local citizens? Does the DC CERT program operate according to the principles of NCO?**

Part of the Citizen Corps Program (CCP), underneath the umbrella of the USA Freedom Corps (USA FC), the DC CERT Program seeks to integrate local citizens into the process of HLS. The program's goal is to increase participation and awareness of emergency preparedness issues among ordinary citizenry. CERT teaches citizens in their neighborhoods to provide basic emergency assistance to the victims of significant terrorist attacks/natural disasters when the crisis overwhelms the resources and response capabilities of professional first responders. CERT functions when professional responders cannot immediately arrive on the scene.

The program also teaches the participants basic concepts of Command and Control (C2) along with collaboration with law enforcement and government actors. CERT teams must collaborate and develop a chain of command when they first arrive on the scene. They must develop strong working relationships with professional first responders in order to effectively assist with the response to a future terrorist attack/natural disaster. They must achieve these tasks to reassure their neighbors in their communities.

This paper relies on interviews with individuals directing CERT and teaching the various courses related to it. The project incorporates observations of an actual CERT Disaster Drill, which took place on February 12, 2005. The author participated in the drill, bringing the direct observations and those of the participants forth. This drill represented the closest approximation to CERT operating in an actual emergency. In addition this project incorporates observation from a Neighborhood Corps (NC) meeting.

This paper focuses on the definitions of the NCO CF and network theory. It first provides a definition of NCO. For the theory and background of CERT this research project uses official DC government policy statements, primary sources that address the program's creation and scholarly works that address first responder theory. Interviews from key personnel connected to the CERT program provide observations from important stakeholders. The drill provides direct, practical evidence to see CERT unfold in an emergency drill. Each of these viewpoints enables the author to provide a complete view of the program and its strengths/weaknesses. The paper concludes with the answer to the research questions and recommendations for future policy development.

Definition of NCO

NCO builds upon the previous research conducted on Network Centric Warfare (NCW) by further hypothesizing that "robust networking, information sharing, and collaboration will enhance the performance of organizations across the range of military and non-military operations"³. NCO represents the military's approach to the process of the transformation. Transformation refers to not only improving current technologies and introducing new innovation, it also focuses on completely reforming and developing significantly new values, attitudes, beliefs, and behaviors⁴. The process of NCO thus includes new approaches to networking, sharing information, and collaboration.

NCO includes four key domains. These domains include the physical, information, cognitive, and social. Military operations take place across each of the four domains⁵. The physical domain refers to objects, settings, and effects. When these forces are robustly networked they achieve interoperability that is seamless and secure⁶. The focus of the physical domain is thus the network.

Alberts and Garstka define the network “as interconnecting systems of computers, communications, data applications, security, people, training, and other support structures that provide local and global information processing and service needs”⁷. The key characteristic of these networks is interoperability. Interoperability refers to the ability to connect different systems and enable their respective users to exchange information⁸.

The information domain focuses on its two key components: data and information⁹. According to Alberts et al, “the key attributes of the information domain can be divided into three major dimensions or vectors: the richness or quality of the information, the reach or distribution of the information domain, and the quality of interaction within the information domain”¹⁰. Information richness consists of eight elements: completeness, correctness, currency, precision, consistency, relevance, timeliness, assurance. Reach focuses on the types of people, individuals, organizations, and terminals that are capable of sharing information. The quality of interaction focuses the ability of users to understand and use the information effectively¹¹.

The cognitive domain focuses on the thought processes in individuals’ minds. Within the realm of military decision-making, this domain focuses on the process of sense-making¹². In order to solve problems individuals create mental models to facilitate their decision-making. Alberts and Garstka elaborate that “over time and with experience, people build up a repertoire of mental models that apply across a range of situations. An important skill is the ability to apply the appropriate mental model for a given situation”¹³. Sensemaking encompasses three activities that connect to each other: forming awareness, developing understand, and making decisions¹⁴. Forming awareness refers to understanding the key facts and variables associated with a situation, such as the “who, what, when, were and how”. Understanding involves drawing on past experiences, training, and education to develop hypotheses, generalizations, and inferences. In turn understanding results in individuals arriving at their decisions¹⁵.

The social domain addresses the relationship between people, organizations, practices, and cultures. Individuals and the roles of their respective organizations are key factors that influence social interactions. Each of these interactions then determines the quality of interactions, sensemaking, and collaboration¹⁶. Culture plays a significant role in the development of social interactions. For example, “culture (i.e, the attitudes, values, and beliefs held by individuals and shared across groups) underpins all social interactions and has a tremendous influence on people, practices, and social structures. . . Culture can be thought of as the ‘way in which a group of people solves problems and reconciles dilemmas.’”¹⁷. Within cultures are three layers. The first layer includes clearly visible cultural characteristics: dress, flags, and symbols. The second layer includes the organization’s norms and values. The innermost layer contains very deep-seated beliefs that individuals have internalized¹⁸. Cultures, values, and norms often influence how members of various organizations interface with, not only themselves, but other outside individuals and groups as well.

The DC CERT program provides an opportunity to see if these principles can be extended to the local level because members must make use of information, make quick decisions, and interact with each other. Each of these domains comes into play because CERT members must share information; they must also follow procedures and work within their organization. They also must interact with first responders and local citizens.

Thus, in the execution of its mission, CERT provides an opportunity to evaluate the organization’s performance and operations according to these four domains. Although these concepts originated in a military context, as warfare shifts to include more peacekeeping and humanitarian operations, where defense forces will have to work with local governments, first responders, and volunteer organizations, understanding the dynamics of these interactions and the factors that contribute to their strength or weaknesses will be important.

The Application of NCO CF to the DC CERT Program

*NCO extends the original tenets and hypothesizes that robust networking, information sharing, and collaboration will enhance the performance of organizations across the range of non-military operations—
Dr. David Alberts and John Garstka, “Network Centric Operations Conceptual Framework Version 2.0”*

The NCO CF focuses on how individuals interact with organizations, technologies, and processes. Ultimately, as Garstka and Alberts state, “Network Centric Operations is not about technology; it is about people”¹⁹. Because local citizens are the main components of the DC CERT program, this organization presents numerous opportunities to apply the model of the NCO CF. Inherently within the mandate of the CERT program are key concepts that apply to the NCO CF. Because CERT is part of the network that connects ordinary citizens to first responders and, ultimately, to the DC government, it is incumbent that local law enforcement, firemen, and paramedics work together with local citizens. This section begins with a brief description of emergency management theory, followed by a description of the emergency network, where CERT fits in that network, and an explanation of how the NCO CF relates to these concepts.

In emergency management theory, mitigation addresses how governments and individuals take steps to minimize the pain, suffering, and financial loss inflicted on communities by natural disasters and terrorists attacks. The goal of a successful emergency plan is to provide the greatest amount of mitigation possible. Mitigation is important because it is the concept around which local governments design emergency preparedness programs. The District of Columbia Emergency Management Agency (DC EMA) defines mitigation as “an effort to lessen the impact disasters have on people, property, communities, and the economy. It is also about reducing or eliminating risks before disasters strike and involves planning, commitment, preparation and communication between local, state, and federal government officials, businesses and the general public”²⁰. Mitigation involves reducing the trauma, costs, and suffering related to disasters and terrorist attacks.

Mitigation is relevant to the NCO CF because similar dynamics take place during Military Operations Other Than War (MOOTW). Providing assistance and mitigation to natural disasters and terrorist attacks fall within the mandate of MOOTW. Indeed Joint Pub 3-07 includes humanitarian assistance, military support to civil authorities, national assistance/support to counterinsurgency movements, peace operations, and recovery operations in its definition of MOOTW²¹. Inherently, when the military must complete humanitarian missions, similar dynamics that take place in the mitigation process appear. The warfighters on the battlefield will have to work with local government leaders, volunteer organizations, and citizens in the conflict area. Understanding how to provide successful mitigation and interface with these individuals will be key in achieving success in the mission. Mitigation will inevitably be a major part in future MOOTW.

Two types of mitigation exist: hard and soft. Hard mitigation refers to creating infrastructures such as dams, levees, improved building standards, generators, and other hard systems. Soft mitigation focuses on emergency preparedness and response. Examples of soft mitigation include fire suppression, and sandbagging against floods. Furthermore, soft mitigation focuses on the human aspect of emergency response such as search and rescue, first aid, care/shelter, emergency communications, and disaster mental health²². Soft mitigation addresses the role of individuals, governments, and professionals and how they interact with each other during emergencies. The NCO CF’s domains can provide a basis to evaluate how successful these interactions are. CERT is a soft mitigation emergency program because it incorporates local citizens into the processes of HLS²³.

The DC Government depends on its professional first responders to maintain order and treat the victims when terrorist attacks and natural disasters occur. The government and local first responders are the key hubs of the emergency preparedness network. In a disaster of a massive magnitude, due to the overwhelming strain on system resources, first responders may not be able to attend to the emergency needs of local citizens. They may not be able to provide accurate information about the crisis and what citizens should do. Before the development of the CERT program the emergency response network only consisted of the DC government, DC professional first responders, and ordinary citizens as seen in the diagram below.

DC Government→DC Professional First Responders→Ordinary Citizens

This network's vulnerabilities are clear. In a significant terrorist attack/natural disaster increased demands place extreme burdens on the resources of first responders. They cannot reach every victim in every neighborhood. The DC government and the first responders are unable to provide information to local citizens. Chaos ensues because there are not enough resources to address the needs of every victim and ordinary citizens have no guidance or information on how to respond on their own before professional help finally arrives.

The DC CERT program functions as a crucial addition to part to the local emergency preparedness network. It is part of the District Response Plan, which details how various DC agencies and the federal government will work together during significant natural disasters and terrorists attack. CERT exists in Emergency Support Function-15 (ESF #15). ESF #15 address donations and volunteer management²⁴. It is a crucial node that links ordinary citizens to professional first responders and to the DC Government. In this network the DC Government and the DC First Responders are the hubs, and the ordinary citizens are the end nodes. CERT is the bridge that connects them together. The following diagram explains how these links function together.

DC Government→DC Professional First Responders→CERT/Neighborhood Corps→Ordinary Citizens

Terrorist organizations such as Al-Qaeda want the citizens of the communities that they target and victimize to be in disarray and unable to help themselves when they unleash their attacks. They want their victims to be disoriented so that they can inflict further casualties in the aftermath of the initial incident. The ultimate goal of their attacks is to show that the victim governments are unable to protect their citizens from their attacks. Their goal is to expose the weaknesses of their victims' governments. With terrorist groups increasingly showing interest in biological, chemical, and nuclear weapon, it is clear that they desire to inflict massive casualties. Furthermore, their goal is to show the world and their supporters that they are willing to murder significant amount of innocent victims²⁵. The following diagram explains how they strive to sabotage the network during their attacks.

DC Government→DC Professional First Responders ||| Link Broken due to Overwhelming Strain on First Responder Resources ||| Ordinary Citizens unable to Link to DC Professional First Responders, Fatally Disconnected from the Hub; More Deaths and Chaos Ensur due to a Lack of Information

Albert-Laszlo Barabasi explains the evolution of network theories and mathematical research over the last few centuries. His work focuses on the issue of robustness, which is crucial to the success of CERT within the network. He addresses how networks can survive and endure extreme and hostile conditions. He states that "simultaneously closing all highways going in and out of Jacksonville and Lake City, Florida, would not only isolate these cities but make the whole Florida peninsula unreachable via highway to the rest of the United States"²⁶. His argument states that removing just one or two nodes from a network will not lead to systemic failure at first. However, after reaching a critical point, the network falls apart because these disruptions break the connections to the key hubs. He uses the example of commercial aviation to illustrate his point. If the airport in South Bend were to fail it would not affect commercial aviation beyond that one city. However, if large hubs such as Chicago's O'Hare or New York's JFK airports were to fail, it would be extremely difficult to complete many domestic and international flights because of the massive disruptions and the cancellations that would follow.

Significant terrorist attacks break down the links between local citizens and first responders. The removal of this crucial link creates the conditions for social unrest, increased casualties, and pandemonium. The challenge for CERT members is be able to function effectively together as a team so that they can help mitigate the traumas associated significant natural disasters and terrorist attacks. They must be able to pass information to panicked citizens and institute order to a chaotic situation.

The NCO CF provides key benchmarks and guidelines for encouraging shared sensemaking and collaboration. Alberts and Garstka define shared sensemaking "as a collaborative process

involving different perspectives. Military operations involve the coordination of many different functional elements—each of which will be ‘seeing’ specific emerging threats and opportunities from their own perspective”²⁷. Their definition of sensemaking bears relevance to the DC CERT program because members must work together and coordinate different aspects of their organization during a mitigation operation. CERT members must work together and share information. They must communicate with each other. They must organize effectively to function well in the event of the attack. Members of the CERT team must be able to network well with professional first responders.

Colonel Boyd created the OODA Loop, a decision-making model. OODA stands for Observe→Orient→Decide→Act²⁸. Although this model is simple at first, when applied to military operations and HLS organizations such as CERT, the process becomes more complicated. It is more complicated because this process often unfolds in several different locations and amongst many individuals. For example, during a light search and rescue operation, some teams of CERT members may be in a building looking for victims while other groups are working on logistics-related issues. Another team may be conducting triage. Each of these teams has to make quick decisions in an unstable environment. That is, these teams have to make sense of the environment around them and then determine the appropriate course of action.

The process of sensemaking serves to broaden the OODA loop’s simplicity and apply to the complex decision-making process to the execution of military operations²⁹. In regard to the CERT program the key factors affecting decision-making and sensemaking are a constantly changing environment. In an emergency, security, political and social conditions change frequently; having the most current information and systems to deliver these updates is crucial³⁰.

According to Alberts and Garstka, “collaboration involves two or more people (within or across organizations) interacting dynamically, adaptively, and interdependently toward a shared objective/goal/mission”³¹. Each individual brings forth knowledge, experience, and understanding of the problems at hand unique to him or herself. Achieving collaboration helps groups avoid the negative consequences of individual decision-making³². However, in spite of the fact that collaboration can reduce the risk of negative consequences, it does not always result in positive outcomes. Collaboration often fails for a variety of reasons. Major reasons for failure include not knowing what how to handle or obtain important information, not having the correct/adequate resources to handle the problem, and lack of motivation among individuals in organizations to address the problem³³.

These theories can benefit the CERT program; they also provide metrics against which to evaluate whether the organization is successful. They can evaluate how the organization well performs and whether its members can collaborate and work together. This framework can also provide advice on steps the program could take to improve itself. It can also provide insight on how to advance the process so that CERTs can collaborate more effectively.

Background on the Formation of the DC CERT Program

In the sacrifice of soldiers, the fierce brotherhood of firefighters, and the bravery and generosity of ordinary citizens, we have glimpsed what a new culture of responsibility could look like. We want to be a nation that serves goals larger than self. We’ve been offered a unique opportunity, and we must not let this moment pass. . . One purpose of USA Freedom Corps will be homeland security. America needs retired doctors and nurses who can be mobilized in major emergencies; volunteers to help police and fire departments; transportation and utility workers well-trained in spotting danger—President Bush’s 2002 State of the Union Address

*DC Citizen Corps creates opportunities for individuals to help their communities prepare for and respond to emergencies. **It brings together local leaders, citizen volunteers and the network of first responder organizations, such as fire departments, police departments and emergency medical personnel.**—DC Citizen Corps Web site*

In his 2002 State of the Union Address, President George W. Bush called on Americans to volunteer and serve their country. He called for Americans to spend two years volunteering in their

communities. To facilitate this goal he created the USA FC Program, which oversees the development of such volunteer opportunities across the country. USA FC is a coordinating council housed at the White House. It has created the USA FC network that matches individuals to volunteer opportunities. The organization is currently working to strengthen programs such as Peace Corps, Citizen Corps, AmeriCorps, and Senior Corps³⁴.

From the national level the USA FC's network extends to the local DC government. DC has its own Citizen Corps Program (CCP) which organizes the local volunteer opportunities for residents of the city. Serve DC administers the CCP Programs. According to the DC Government, "the goal is to have all citizens participate in making their communities safer, stronger and better prepared to prevent and handle threats of terrorism, crime, and disaster of all kinds"³⁵. The mandate of the DC CCP Council is to implement this goal. It includes key stakeholders in emergency management such as law enforcement, firemen, paramedics, volunteer organizations, businesses, faith-based organizations, schools, health care institutions, and the transportation sector³⁶. The DC CCP Council achieves these goals by matching the needs of first responders with the skills of volunteers to protect their families and neighborhoods from crime, terrorism, and disasters; educating the public on safety, teaching them safety, and information of how to respond effective to a crisis; innovating and creating new programs/opportunities to encourage, facilitate, and develop citizen participation; promoting CCP across the country, raising the program's awareness; and engaging in local outreach³⁷. Lastly the DC CCP Council collaborates with the local government and federal agencies to raise awareness of the volunteer programs open to DC residents: CERT, Emergency Medical Technician Corps, DC Police Reserve Corps, Neighborhood Watch, and Medical Reserve Corps³⁸.

The idea behind CERT is to reduce the burden on professional first responder services in the event of a catastrophic natural disaster or terrorist attack. The organization operates under the theory that "well-trained, better informed, and better prepared citizens [are able] to take care of themselves and others during times of crisis—allowing first responders to address the most critical needs"³⁹. CERT bridges the gap between the professional first responders and ordinary citizens. It encourages them to become more involved in disaster and emergency preparedness.

How CERT Operates

The Incident Command System (ICS) is the system used by fire and law enforcement agencies to manage emergency operations. When CERTs activate for their neighborhood or workplace they become part of the system—Community Emergency Response Team Training Manual

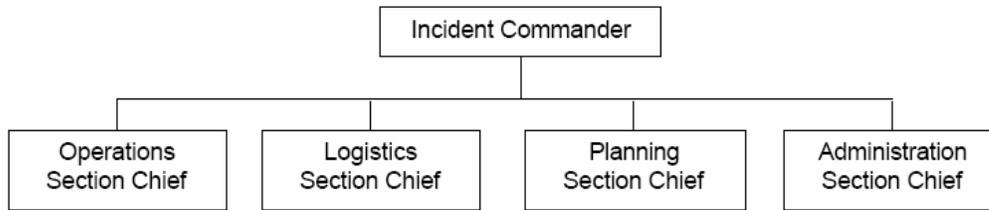
Up until February 2005 the George Washington University Medical Center administered the DC CERT program on behalf of the Serve DC office and the DC CCP. Effective March 2005, however, the Serve DC office will schedule these trainings under the Neighborhood Corps (NC) Calendar.

The CERT training takes place over six evening training sessions. These trainings include sixteen hours of class time and four hours for the drill. According to the web site for the DC CERT program the goals of the training are to:

- "To present citizens with factual information about what to expect in the event of a major disaster and about what immediate services will be needed.
- To train them in the necessary life saving and decision making skills in order to decrease injury and mortality while maintaining the safety of the rescuer.
- To organize teams of citizens to offer immediate help to the victims of a disaster until professional life support services arrive.
- To enable citizens to collect disaster intelligence for use by professional responders"⁴⁰.

The class teaches six sections on key topics related to disaster preparedness. These subjects include Disaster Preparedness, Disaster Fire Suppression, Disaster Medical Operations, Light Search and Rescue Operations, Disaster Psychology/Team Organization, and Terrorism⁴¹. In each of these

sessions, taught by professional first responders and by CERT members who have already completed the initial course, the students learn how fire behaves, how to put out small fires, how to conduct triage, how to turn off utilities, and how to keep administrative records. After students complete the course, the disaster drill follows.



ICS Command Function Organization Chart

ICS Command Function Organization Chart, showing the Incident Commander at the top and the four Section Chiefs (i.e., Operations, Logistics, Planning, and Admin) reporting to the Incident Commander.

(Above: Description of ICS System).

(Source: Community Emergency Response Team Training Manual)

In regard to the NCO CF the key component is the Incident Command System (ICS). The ICS is very important because it establishes the chain of command when such events occur. The theory of the ICS dates back to the 1970s, when fire departments developed the concept of the Incident Management System (IMS). These departments based the IMS on the theory of “unified command”; the goal was to integrate the missions of all responding agencies (such as police, fire, and other first responders)⁴². The groundwork of the IMS is the theory upon which the ICS system relies today.

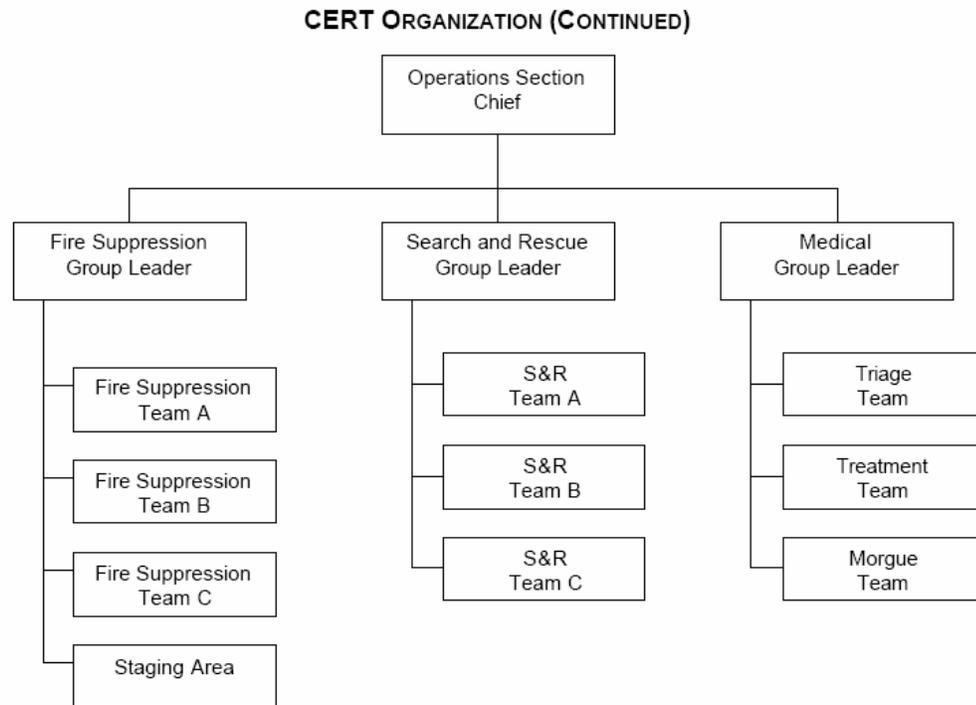
Unit 6 of the CERT course addresses this concept. The CERT Training Manual defines the concept: “CERTs are part of the ICS. All CERTS, through their incident commander, report to the first fire or law enforcement official at their location and take directions from that person until told that the command system has changed, or until relieved”⁴³. Thus the issues of collaboration and trust appear at the outset in developing the ICS. The Incident Commander (IC) of the CERT must interface with first responder professionals.

When a disaster strikes and CERTs first appear on the scene the ICS system establishes itself. The first member to arrive on the scene becomes the IC. The IC creates the C2 structure of the ICS. These branches include the Operations Section Chief, the Logistic Sections Chief, the Planning Section Chief, and the Administration Section Chief. The Training Manual identifies these key points as important in the facilitation of the ICS:

- “Each CERT must establish a command structure.
- A CERT leader—or, in ICS Terms, Incident Commander—is appointed to direct team activities. For CERT volunteer activities and training, this person may be appointed. However, during activation for a disaster, this person is the first to arrive at a pre-designated staging area.
- The location established by the CERT Leader as the central point for command and control of the incident is called the Command Post for the CERT. The IC stays in the command post. If the IC has to leave, the responsibility of the IC must be delegated to someone in the command post.

- The CERT Leader may appoint members to assist with managing resources, services, and supplies (logistics). CERT Leaders may also appoint members to collect and display information (planning/intelligence) and collect and compile documentation. To maintain span of control, this delegation occurs as the organization expands.
- The CERT may operate as a single team that performs all activities as required, or may be divided into smaller teams (under Operations) of at least three people to achieve specific goals developed by the IC (e.g. fire suppression, medical, search and rescue), with a leader for each.
- In all situations, each unit assigned must have an identified leader to supervise tasks being performed to account for team members, and to report information to his or her designated leader”⁴⁴.

The IC forms the base of the ICS for the organization. He/She is the contact person to manage the response to the incident. He/She then delegates the responsibilities to members as they arrive on the scene.



CERT Operations Section Structure

CERT Operations Section Structure, showing the Operations Section Chief at the top and the three Group Leaders underneath (Fire Suppression, Search and Rescue, and Medical). Reporting to the Fire Suppression Group Leader are all fire suppression teams and the Staging Area. Reporting to the Search and Rescue Team Leader are all search and rescue teams. Reporting to the Medical Group Leader are the Triage Team, the Treatment Team, and the Morgue Team.

(Source: Community Emergency Response Team Training Manual)

Of key importance is the Operations Section (OS) of the ICS. The OS Chief divides the team into the three subdivisions described above in the CERT C2 system. The key overriding principle is that the most important person in any rescue operation is the responder himself/herself. He/She has to watch for his/her own well-being first to prevent the situation from deteriorating further. The key priority is for “CERT members to take care of themselves, their families, their homes, and their neighbors”⁴⁵. Secondly the OS reports to the IC, who is responsible for delegating and assigning

responsibilities to all CERT members. The IC must also “prioritize actions and work with the Section Chiefs”⁴⁶. The CERT organization must be flexible; it is essential that the OS and the IC work together to ensure that they do not overextend their resources, supplies, or the capabilities of other CERT members⁴⁷.

By the end of the initial training CERT members clearly know their responsibilities and their roles during crisis situations. Although they are not professional first responders they must adopt similar C2 structures in responding to crises. This training prepares the members for the CERT Drill that takes place upon completion of the course.

The organization of the CERT ICS seems to follow an industrial age approach. During the industrial age military C2 was very vertical and hierarchical. Information flowed from the bottom of the organization to the top—and vice versa. Information did not flow horizontally between different departments⁴⁸.

Missing in the CERT C2 structure are mechanisms to facilitate horizontal communication of information. Communication seems to follow a vertical chain of command, flowing from the top to the bottom. Based on the design of the ICS, during an actual operation, CERTs may not have the correct organizational structure to collaborate across the different divisions within the OS. That is, members within the light search and rescue team may not be able to reach their triage counterparts with important information because they have to collaborate through the OS Chief and the IC.

The CERT Drill of February 12, 2005

On February 12, 2005 the DC CERT program conducted a disaster drill at Ross Hall on the campus of the George Washington University. Twenty-three CERT members indicated they would attend the exercise. Of the twenty-three members who had confirmed their attendance, twenty-one participated in the actual exercise. The author participated in the drill. The schedule for the drill consisted of a presentation from a Washington Gas representative. Following the presentation would be two exercises and a final discussion at the end.

The representative from Washington Gas discussed shutting off gas valves. He taught the CERT members how to turn off the gas at a typical house. He provided the members with basic instructions on how to deal with gas meters. He also focused on how gas could become flammable. The CERT members then walked up to the mock gas meter and shut off the valve. Many CERT members used other methods to shut off the gas.

After the gas presentation Renee Evans, the CERT manager, instructed the participants to divide in two. The first drill would involve fire. The task was to choose the appropriate fire extinguisher. The first scenario, written on a card in an adjacent room, was a chemical fire in an old school with rags. The rags were on fire; nearby were bottles of turpentine and paint. The CERT members briefly discussed what to do and then picked the appropriate extinguisher.

The next speaker was the instructor who provided an overview of the ICS. He again reiterated the principle that the first person on the scene is the IC. The second CERT to arrive falls under the oversight of the IC. This system exists because the first member on the scene has the most information. The instructor envisioned CERT members playing key roles in controlling crowds around fires and other disasters.

Members in the audience discussed how to organize. Key questions about how members should communicate followed. One member suggested that the logistics chief bring radios. Another member suggested having two teams of “runners”. This discussion served as a key debate on how to achieve collaboration and shared situational awareness. The instructor then stated that it was up to the CERT members themselves to organize.

The instructor then posed a question to the audience about how to handle a blackout at a senior citizens center after a major disaster. One member suggested that the director of the center function as the IC, but the instructor disagreed. He asked, “What if the director lives in Haymarket, VA”? Instead he suggested that CERT members meet with the director ahead of time to develop an emergency plan together.

The next interactive exercise involved conducting triage in a building after a category five hurricane. The groups broke out into the same teams as before. The task was to identify victims, triage them, and document them. The groups walked into an adjacent room that was dark. Using their flashlights, they identified cards that described the condition of the victims. In the room the members discussed each victim and triaged accordingly.

The drill was not as interactive as the author had envisioned. The “drills” amounted to discussions followed by very basic operations that took place in adjacent classrooms. Specifically it consisted of reading scenario cards and then doing very basic operations. Unfortunately a classroom at a university cannot substitute for a real disaster situation. Kevin Lee and Renee Evans indicated that more realistic drills take place “once a year”. The CERT program should have this drill more often since the “very basic exercises” fall short of a true simulation. In the program’s defense, however, given that these drills cost between \$30,000 and \$40,000, funding restrictions are a major obstacle to achieving this goal. To that end it is imperative that the DC CERT and NC programs receive increased funding to resolve these discrepancies.

At the drill many of the packs missed some items. Evans stated that this deficiency was due to the fact that the packs “were mass-produced”. Unfortunately, should CERTs need to deploy in a major disaster or terrorist attack, they may not have the appropriate equipment. In their defense funding problems contributed to this disparity. This situation again calls for increasing funding so that these packs can have the best equipment possible. Given funding constraints, however, the packs still provide an excellent amount of equipment.

The lack of a clear communications system is a major problem for the CERT Network. Unlike coordinators of Neighborhood Corps, CERTs lack walkie-talkies. They do not have any radios or any real system with which they can achieve situational awareness. In a real disaster, if CERTs deploy and go into building, teams of two must either return back to the IC with information, or the “runners” must do so. This process takes away two team members away from tending to victims. Furthermore, when information passes from the first team to the IC via the runners, important details become muddled; or they change slightly. This system does not achieve situational awareness.

Not having a clear communications system and incomplete equipment reveals that the CERT program initially lacks mechanisms necessary for taking advantage of NCO. The fact that the IC would have to appoint “runners” to provide information to him and teams in a building shows an industrial age approach to C2 apparent in the manual taught in the classes. In addition, the lack of mechanisms for members of teams to talk to each other speaks to the problem of CERT not having adequate techniques, tactics, and procedures (TTPs) for achieving successful basic emergency mitigation.

Staying Connected after CERT Classes Finish/The Role of Neighborhood Corps (NC)

In the weeks that follow completion of the course the trained citizens stay in touch with CERT program and the Serve DC office/DC CCP via email announcements of additional trainings. These training sessions fall under the umbrella of NC, the next step in the process when the course ends. NC provides training sessions (see appendix D) that reinforce skills learned during the CERT course. According to the NC Web site the members of the organization “have two major responsibilities: 1) to educate their families and neighbors about emergency preparedness and 2) to be prepared to respond to emergencies in their community if professional first responders cannot reach the scene”⁴⁹. NC is one mechanism that enables CERT members to stay connected once training finishes. Although not a formal requirement, NC recommends that members complete the CERT training or join one of the other DC CCP programs.

NC encourages CERT members and volunteers from the other DC CCP programs to form their own networks⁵⁰. Kevin Lee serves as the manager of Neighborhood Corps. Lee organizes and runs the NC program.

Lee spoke with the author of this paper about NC. He stated that the program began in August of 2004, when NC held its forum at the DC convention center. The previous director of the program designed the current concept. The initial forum included presentation about the various DC CCP programs, presentations by first responders, presentation by staff from the Department of Homeland Security, and breakout sessions of volunteers divided by ward.

NC functions according to the principles that the volunteers organize themselves. Two strong examples of early volunteer organizations include one in Chevy Chase, a neighborhood situated in Wards 3 and 4; and Ward 6, which includes Capitol Hill and the Waterfront. NC is creating networks. Currently these networks of volunteers exist in Wards 1, 3, 6, 7, and 8. Wards 2, 4 and 5 are next (For a map of DC's Wards, please see Appendix F).

Every month Kevin Lee emails updates to members that provide information about new volunteer opportunities. To market the program Lee attends a large number of community events. He sends out a monthly email to members of other DC CCP programs information about NC training courses every month. In addition Lee is currently working to hold information sessions to "develop best practices" with NC coordinators.

Lee stated that CERT is "rolling up" under the NC calendar. With George Washington University no longer managing the CERT program it will fall under the NC umbrella. He conceded that NC, CERT, and other DC CCP programs "ask a lot" out of the volunteers. Although people in neighborhoods are better equipped to form networks, and it is the responsibility of people in these same neighborhoods to work together, this task is difficult because people are very busy.

Lee also addressed the basic nature of the CERT drill. He stated that full scale drills are more expensive, but that a more realistic exercise will take place this summer. NC and CERT offices are working together with DC EMA to enable DC CCP volunteers into their exercises. DC CERT packs have more materials than other cities. Lee also stated that a communications system is being designed, although he conceded that it is in early stages.

In addition Lee mentioned that DC CERT member Darrell Duane, who also teaches the fire safety component of the training, has created a web site called www.dccert.org. It includes a list serv of email addresses and contact information of CERT members who have completed the course. The web site claims that, although its creator and members who logon work closely with first responders and the DC government, it is a site run by individuals who have completed the CERT program⁵¹.

Neighborhood Corps Meeting on February 17, 2005 on Emergency Equipment Usage

On February 17, 2005, a NC training occurred. Seven members out of the fourteen who signed up appeared at the training. The training was very interactive. The topic discussed was using radios for communication and the rest of the equipment in the NC bag. NC coordinators will be the only members to receive this bag. The instructor emptied the bag and placed various equipment on members' desks. He asked each of them to create scenarios on how to use the equipment.

The key debate during the training was the process of identifying the IC. The author argued that having each NC group develop its own symbol to identify the IC could create confusion if other neighborhood cells had to work together in an emergency. Kevin Lee replied by saying that such scenarios would already be "confusing" and that he had "not figured out how to address this issue".

The instructor also discussed the use of radios in the NC network. He stated that members would use the radios to achieve collaboration and work together. He stressed that the radio was to be used only when necessary. The radio was not to be used for "idle chatter". He told members to "keep talk down to a minimum" when using the radios. The radios enabled members to speak with the IC and to each other.

Of key importance was that the instructor admitted that the radios had low frequencies. They were open to interference from higher frequencies. The problem is that these limitations might preclude collaboration and shared situational awareness. However, due to the issues of funding, these radios provide the best system with the funds available. At the very least these radios enable nearby NC coordinators to interface with each other. To solve this challenge the instructor recommended that

NC members ask the local Fire Department or the Police Department to use their radios to communicate. Another member suggested using cell phones. In the worst case scenario, where voice communications failed, the instructor suggested that the IC select “runners” to relay information.

The issues raised in the meeting connected to the issues of achieving effective information sharing, collaboration, and shared situational awareness. As in the CERT drill the fact that NC members did not have a clear system that identified their leader, coupled with the lack of clear TTPs on how to use radio communications, reveals weaknesses. NC does not seem to be using NCO to achieve its goals. The fact that the radios could receive interference would reduce the quality of interactions between members and the IC on the scene. Low quality radios could increase difficulties in understanding and implementing the intent of the IC. To that end, if they show initiative, NC and CERT members might consider purchasing higher quality radios because unfortunately budgetary constraints prevent the DC CCP from assuming these costs. These members might also take the initiative by lobbying their elected officials for increased funding so that the program will be able to provide radios for everyone.

Analysis of Interview Data

Interview with Renee Evans, Manager of the CERT Program

Renee Evans discussed the CERT program with the author of this paper. The first question asked to her was what mechanisms the CERT program took to encourage interaction between members. She responded that no formal mechanism exists. She envisions CERT as functioning as a program that enables citizens in their own neighborhoods to work together.

In regard to the Neighborhood Corps (NC) program she stated that it is the umbrella that links the other DC CCP programs together. Evans stated that NC functions as the link that connects volunteers together once the CERT program finishes. She envisions her office playing a role where it provides encouragement to CERT members to find their own neighbors and develop their own networks. She sees NC as playing a major role in that area. The Train the Trainer CERT class, which teaches current members how to instruct new citizens who join the program, also provides a mechanism for collaboration and working together.

Her marketing efforts are minimal. Instead she relies on CERT members to “spread the word”. Although not an immediate concern, because CERT is a federal program, it could become a causality of budget cuts. Her role is that of a guide that enables the community to take over. She also views the NC program and the training sessions it offers as essential to having the CERT members work together with each other.

The relationship between CERT members and professional first responders varies between jurisdictions. In DC, because of the overlapping law enforcement agencies, such as the Metropolitan Police Department, Park Police, Secret Service, Fire Department, and Emergency Medical Services, volunteers do not have many opportunities to interact in drills and exercises. Because no significant terrorist attack or natural disaster has taken place in Washington, DC, there has been no opportunity yet to see CERT operate “in action”. She hopes that the members remember their skills should a real disaster or terrorist attack ever takes place.

Her other general comments were that the DC CERT program has members from each of the city’s eight wards. Metro has also developed its own CERT program. To participate in the Metro CERT training completing the basic course is a pre-requisite.

Interview with Darrell Duane, CERT Instructor

Darrell Duane is an instructor of the CERT program. He instructs CERT members on light fire suppression and safety. He serves as a volunteer firefighter in Fairfax County. He discussed the CERT program with the author of this paper. He is also the creator the CERT-Trained List Serv, which is part of www.dccert.org.

His vision for the site is for CERT members who choose to log on and contact each other via email. He is also making a similar web site for the volunteers of Fairfax County's Department of Fire and Rescue. In addition, he is also working on software improvements to facilitate better collaboration between CERT members. In the far future he might even develop a chat room capability so that CERT members can speak to each other in real time.

He stated that the DC CCP and NC offices provided little support in his efforts to create the site. His work is all on his own. The directors of both programs understand that the site exists and have informed CERT members about it, but their efforts have stopped there.

He does not envision CERT members working together with first responders. He believes that there are very few situations where they would actually partner up and work with first responders. However, Renee Evans has thought up of organization battalions among CERT members, similar to the methods used by CERT-LA. That type of relationship exists more in the CERT-LA program, which is more advanced and developed than its counterpart in DC (For an overview of CERT-LA, see Appendix B).

Duane is not very optimistic about CERT members' abilities to network and collaborate during a natural disaster/terrorist attack. During the interview he stated that perhaps only five percent of CERTs have organized and contributed beyond the original training classes. According to Duane, "CERT provides more training than there is now". When asked about dirty bombs and more catastrophic attacks he stated that the training and drill provided "a basic idea of what is possible". Although he stated that only about five percent of CERTs have invested more effort than the original training course, he admits that citizens in their neighborhoods at least now have more information on how to respond during natural disaster and terrorist attacks.

His other general comments included the fact that he believes CERT is an "entry program" that "provides a basic idea of what is possible". However, he believes that the program suffers from a lack of volunteer management. He argues that the program should focus its efforts on volunteer recruitment and retention. He suggests that perhaps individuals with non-profit organization experience could provide insight in attracting better volunteers and keeping them involved.

Otherwise he agrees that the CERT drill is very basic. He believes that CERT will fall under the Neighborhood Corps umbrella. He believes that that organization will become the structure that unifies CERT members as the grant to George Washington University runs out of money. He mentions that eventually Neighborhood Corps members will have radios and that communication between volunteers will take place under that system. The most important trend seems to be that CERT mainly functions as a "gateway program".

Survey of CERT Members

This project surveyed individual CERT members. From Darrell Duane's CERT-Trained list serv, the author obtained email addresses of members within the program. These members received a brief questionnaire that focused on their motivation for volunteering with the CERT program, why they joined, whether they attended the disaster drills, and how they collaborated. Although nineteen members received the questionnaire, only five responded to the survey (See Appendix A for description of constraints related to completing this project).

Doreen Conrad responded that she joined the CERT program because she saved lives on several occasions. She thought that she could be "useful in a crisis". However, personal issues and her busy work schedule prevented her from becoming more active in the CERT program. Through her other professional and personal activities—volunteering and lobbying—she has been able to make friends. At CERT she has been unable to network with other people because they have not exchanged contact information.

Susan Taylor joined the CERT program because she is the director of the Churches of Scientology Disaster Response organization. Chere Calloway joined CERT because of her community service and interest in medical and Emergency Management issues. Thomas Carr joined CERT because he is currently enrolled at George Washington's School of Engineering and Applied Sciences, where he is completing a degree in Emergency Management. He wanted to share his skills with the

community. Sarah Potts joined CERT because she always had an “interest in emergency/disaster response”. According to Potts, “participating in CERT has allowed me to explore this interest in a manageable way. It is a great to have an opportunity to learn new things. The more you know, the more you are able to help yourself and others”.

Three out of the five members surveyed participated in the CERT Disaster Drill and NC meetings. Conrad, Carr, and Potts had participated in the drills, while Taylor and Calloway did not. Carr and Conrad were able to collaborate together during the exercise but did not provide further comments in their answers. Potts stated that she thought “we worked well together given that we had never met before and this was the first experience of this type for most of us”.

In regards to networking with other CERT, Citizen Corps, and NC members, Doreen Conrad responded that there “were great barriers erected to finding out who these people are and where they live.” She currently only knows “the name of one person from my group because I occasionally run into her”. Susan Taylor had no answer. Calloway answered no. Carr responded “Yes/No” and that “after over a year [he] found a neighbor interested”. Potts responded that a “a few us met in mid-January to discuss forming a Neighborhood Corps. We were hoping to find a few more members at the Community Emergency Plan table top exercise for our neighborhood”.

When asked about whether they had sought out other CERT members or attempted to interact with other CERT/NC/Citizen Corps members, the answers yielded little evidence of collaboration. Conrad answered “no”, again citing the difficulties in finding contact information. Taylor said “no”. Calloway answered “no” as well. Carr stated that he had published information in his church’s parish bulletin in the program. Potts said that she had met with her neighbors.

Conclusions/Recommendations for Future Policy

In its current form it is clear that the CERT program does not yet operate according to the principles of NCO. It falls short of achieving the promise of NCO CF in several areas. To that end, in a real attack or catastrophe, CERT and NC may not be able to function as a successful node in the network described earlier in this paper.

First of all the program’s organizational structure is blurry to the author. Although the structure is clear to the DC EMA, perhaps the office might improve its presentation to members of both NC and CERT so that they understand these programs’ roles. One factor causing this ambiguity is the fact that, in Washington, DC, a significant overlap exists among current first responder and law enforcement agencies. In Washington, DC, the local Metropolitan Police Department, Park Police, Secret Service, and Fire/EMS provide law enforcement and emergency responses to the city’s residents. With so many law enforcement and first responder organizations it is hard for CERT to have a defined role. In addition the functions of CERT and NC tend to overlap. Some redundancies exist.

The next major weakness in CERT is that there is no uniform system of organization within NC and CERT divisions. During the drill and the NC meetings that the author attended participants discussed at length how to “identify” the IC. With no clear system to define IC’s, should a major crisis require different CERT and NC cells from other neighborhoods to collaborate, establishing effective C2 would be very difficult because members would not be able to clearly determine which individual is in charge. As it is it is not clear what boundaries exist in NC and CERT neighborhood organizations.

Because the Serve DC office expects members to take the initiative in working together, without some level of unifying control, interoperability between neighborhoods across the city could suffer. In a real-life terrorist attack members would not be able to collaborate and achieve situational awareness. The confusion would also delay the OODA loop process. Members would take longer times to Observe→Orient→Decide→Act. They would be confused, and effectiveness would suffer because of the tempo of responding to emergency situations.

According to Evans and Lee the reasons for this lack of clear definition stems from the fact that neighborhood politics and rivalries are strong in many parts of the city. Their major concern is not allowing politics to undermine CERT and NC’s efforts. However, it might serve both programs better

if Lee and Evans developed some basic limited definition of neighborhood boundaries to promote some limited form of interoperability without inflaming local political rivalries.

In addition the vertical communication system apparent in the CERT drill could waste crucial time in responding to a disaster or terrorist attack. Instead of being able to pass important information to other team members directly, all communication would have to travel through the IC, thus taking extra precious time that they could spend focusing on mitigation. The communication system must move from one more suited to the industrial age to the information age.

Furthermore, not enough comprehensive CERT drills take place. Although funding and budgetary concerns influence the availability of exercises, the drill that occurred at George Washington University was not real enough. Walking into a room with a flashlight and looking at a scenario card cannot really create the conditions of a real-life crisis situation. Renee Evans indicated that comprehensive drills take place about once or twice a year. These drills are important because they provide the most real-life opportunities for CERTs and NC members to test their understanding of the ICS. If they cannot learn and reinforce their skills vis a vis the ICS they will not become Net-centric.

In the responses to the questionnaire participants cited difficulties in reaching out to other members of CERT and NC. They have expressed this sentiment in spite of the fact that Lee sends out emails on behalf of volunteers. Evans stated in her interview that some people may be “uncomfortable” in “giving their personal information”. Inherently this dilemma leads to a significant conundrum: protecting individual privacy while providing mechanism to encourage collaboration. To her credit, however, Evans has asked members to give permission for their contact email to be used. Lee has also asked NC volunteers for permission to share their information. Both Evans and Lee are taking proactive steps to address this problem. Duane has a list of members on his web site. In spite of these efforts members of the program must have better tools and methods with which to collaborate.

In spite of these criticisms, given that the CERT program in DC is not more than two years old, and the NC program is not even nine months old yet, they have at least laid the groundwork for future successes. NCO could benefit the organization and applying these concepts would enable improvements in effectiveness in several areas. These principles can extend to HLS programs because they have similar C2 structures compared to the military.

It is important to note that these constructive criticisms are not attacks against both the CERT and the NC programs, but rather suggestions on how to build upon their already impressive successes. CERT and NC provide a worthwhile function within the DC EMA network, and Evans and Lee’s efforts have been instrumental in making these successes possible.

In their defense the Serve DC office and the DC CCP face obstacles in making the CERT/NC programs more Network Centric. First of all, unlike other parts of the country such as California where natural disasters such as earthquakes, mudslides, and brush fires occur on a regular basis, DC has fewer “real opportunities” for members to test their skills. Secondly, as no real terrorist attack has occurred at a level where CERTs would have deployed (which everyone hopes does not happen), members have fewer opportunities to put their skills into action. The heavy saturation of professional law enforcement and professional first responders also limits opportunities for CERT and NC members to be used.

However, the greatest barrier to making both CERT and NC organizations that take advantage of the NCO-related processes is the issue of volunteer recruitment and retention. Indeed the fact that only five members took the time to respond to the questionnaire underscores the difficulties of reaching and motivating volunteers to participate and make difficult commitments. Darrell Duane even conceded that only five percent of CERT members have involved themselves beyond the original training course. Lee also discussed the problems of volunteer recruitment and retention.

These difficulties, however, are just not unique to CERT and NC. Indeed, across the field of emergency medical services, the participation of volunteers has been steadily decreasing. Among volunteer professional first responders the declines have been staggering. In 2002 the Pennsylvania Emergency Management Agency prepared a study for the state legislature. One of the key findings was that in 1976, the population of fire and emergency service volunteers numbered 300,000. By 1995 the number of volunteers was only 70,000⁵². In other words, in the nineteen year period, the number of

volunteers decreased by 230,000! That decline translates to a roughly seventy-five percent drop. A report in Genesee County, New York identified the reasons why prospective volunteers may not follow through on their commitments. The Genesee County report cited the time commitment involved in volunteering. The report stated:

As prospective volunteers see the burden imposed on existing fire department members they soon realize they don't have the time or interest to become a volunteer member. As existing volunteers burn out from time demands and workload, a cycle is created that puts a greater burden on those remaining and will eventually doom the volunteer fire service as we know it today. Ineffective leadership also contributes to the loss of department members⁵³.

Although CERTs and NC members are not professional first responders, the dynamics affecting firemen/women and EMS workers are relevant because in both cases the organizations are dependent on volunteers. As volunteers make the ultimate choice whether to participate or not it is important that CERT and NC develop methods to encourage members of the community to volunteer and remain involved in each program/organization.

To enable the DC CERT and NC programs to become Network Centric, the Serve DC/ DC CCP Council could first clarify the TTPs of each organization. Secondly developing a communication system for members in each cell to use across the city would greatly enhance collaboration and shared situational awareness. Developing such a system calls for standardization of communications technology. To test and refine the TTP's of both organizations the Serve DC/DC CCP Council should host more drills. In order to make this goal possible it is incumbent that these programs receive increased so that they continue to serve their mandates effectively. The office should also strive to eliminate barriers that prevent communication between members while also respecting individual privacy. Admittedly financial considerations may preclude such steps from taking place in the near time. However, in the long term, these proposed improvements would at least lay the groundwork for more effective operations of these organizations.

Finally, the Serve DC office could introduce rewards and recognition programs to give volunteers positive reinforcement. The Pennsylvania Emergency Management Agency suggested offering rewards and recognition as a method to keep volunteers engaged⁵⁴. George Oster, of Iowa State University's Fire Service Institute, stressed the importance of recognition. Volunteers really appreciate recognition. The lack of any positive recognition lowers morale and is a negative incentive against participating further⁵⁵. To solve the issue of volunteer recruitment and retention the office could take those steps.

In future conflicts the military will have to increasingly interact with not only local governments and their law enforcement agencies, but also with volunteer organizations and ordinary citizens. Future projects could focus on developing metrics within the NCO CF to analyze the issues of volunteer recruitment and retention. As future operations will involve working with partners that are under no obligation to participate (such as non-profit organizations, charities, and private volunteer organizations) it will be important to understand these motivations as they relate to collaboration and shared situational awareness. In understanding how to incorporate the local citizen into the process of HLS it will also be important to determine the motivations and the reasons for volunteering and how those factors affect the goals of increasing NCO.

Appendix A:

Constraints in Completing this Project

Major constraints in this project involved two major factors: time and the response rate to the surveys. As this project was dependent on the CERT drill and NC meetings, inclement weather resulted in the cancellation of several events. These cancellations reduced the opportunities to collect more data and interact with more participants. In March and April the author will be participating in the Metro CERT class and NC meetings. He will incorporate these observations in the presentation to be given in June.

Secondly, as the DC program is still in its infancy, this paper provides a snapshot on where these HLS programs are as of March in 2005. Thus, as the program is still new, improvements could—and will—still materialize over time. To that end the author will follow the track of the program's development and re-evaluate the findings as time moves forward.

Perhaps the largest constraint was finding participants to answer the questionnaire. Due to privacy issues finding contact information was somewhat difficult. The closest source of participants was the CERT-Trained web site run by Darrell Duane. The site contains a list-serv in its early stages. Of nineteen names only five participants responded. Admittedly this small response poses a problem in gauging accurate perceptions of the program. However, the fact that a small number of participants responded underscored the difficulties of engaging volunteers. Given that Duane even indicated that roughly 5% of members involved themselves beyond the initial training, and that volunteer EMS services are losing volunteers, the fact that five participants responded is probably a decent rate when one takes these variables into consideration.

Appendix B:

Origins of the CERT Program & Description of Programs in other Cities:

The Establishment of CERT-LA

Community-based preparedness allows us to prepare for and respond to anticipated disruptions and potential hazards following a disaster. As individuals, we can prepare our homes and families to cope during that critical period. Through pre-event planning, neighborhoods and worksites can work together to help reduce injuries, loss of lives, and property damage. Neighborhood preparedness will enhance the ability of individuals and neighborhoods to reduce their emergency needs and to manage their existing resources until professional assistance becomes available—Community Emergency Response Team Manual

The concept of CERT dates back to February of 1985, when officials from the city of Los Angeles traveled to Japan to study its earthquake preparedness plans. They observed that that Japanese had taken the initiative and taught entire neighborhoods how to respond and to minimize the devastation following a major earthquake. They encountered organized neighborhood teams who knew basic fire suppression⁵⁶. They saw how the Japanese government had prepared their local citizens to respond to national disasters.

That September these officials visited Mexico in the aftermath of an earthquake that registered an 8.1 on the Richter scale. The earthquake caused the deaths of 10,000 people, and 30,000 Mexicans suffered injuries. Unlike Japan the Mexican government had not taken the initiative in designing programs to teach their local citizens how to respond to natural disasters and terrorist attacks. Even though they lacked professional training, local citizens took the initiative to respond to the earthquake. CERT LA credited these volunteers with 800 rescues. However, unfortunately, due to their lack of training, 100 of these volunteers died⁵⁷. The lack of training led arguably to unnecessary death.

From witnessing the situation in Mexico, sixteen years before the tragedies of September 11th, Los Angeles learned the lesson of preparing local citizens for natural disasters and terrorists attack in advance. They realized that local citizens must be trained effectively to respond to these attacks, as the time period for professional first responders to arrive may be significant in a catastrophe.

In 1986 the Los Angeles City Fire Department (LAFD) created the pilot program of what would later become CERT. According to CERT LA, “a concept developed involving multi-functional volunteer response teams, with the ability to perform basic fire suppression, light search and rescue, and first aid”⁵⁸. The first team included thirty people. They completed their training in early 1985; through drills and exercises, they demonstrated their capabilities⁵⁹. This program laid the groundwork for the evolution of CERT.

Budgetary concerns precluded the program from expanding and gaining more political support. The Whittier Narrows Earthquake of October 1987 raised awareness of the issue of emergency preparedness. In the aftermath of this disaster the City of Los Angeles recognized the importance of training local citizens to respond to natural disasters and terrorist attacks. The City Government created the Disaster Preparedness Division (now called the Disaster Preparedness Unit) within the Los Angeles Fire Department. This Division laid the groundwork for CERT to be created⁶⁰

In 1993 the Federal Emergency Management Agency (FEMA) made the decision to promote the CERT program and make it available nationwide⁶¹. In conjunction with the LAFD the Emergency Management Institute elaborated upon the CERT concepts and applied them to various other threat disciplines⁶². The City of Los Angeles laid the groundwork for the facilitation of the CERT program.

CERT-LA: Current Operations

As the first program of its kind, CERT-LA is the model against which to evaluate current programs. As of the year 2000 the program had trained more than 20,000 people. On average, during

CERT-LA's seven week program, 300 to 400 complete the training⁶³. As the original CERT program it offers an excellent contrast to its counterpart in DC. Dating back to the late 1980s, having been able to mature and grown over almost two decades, CERT-LA offers insights and metrics against which to compare the progress of the DC program.

CERT-LA has a fully organizational structure that divides itself into battalions. The battalion coordinators are responsible for organizing local meetings. They are the contact persons for CERT-LA⁶⁴. In order to raise its profile the program has its own presence on the Internet. Graduates and volunteers from these battalions maintain and run the organization's web site⁶⁵.

Training extends beyond the initial CERT class. After completing the initial training the organization offers intermediate and advanced classes. The intermediate and advanced trainings teach members how to handle disasters and emergency response first aid⁶⁶. The level of trainings brings participants almost to the level of professional first responders.

At least since 1999 CERT-LA has held numerous events in the Los Angeles Metropolitan area for its members to train and to test their new skills and to raise the program's profile. The CERT-LA web site catalogues these opportunities. Members have had the opportunity to participate in annual "refresher drills" and emergency preparedness fairs. They have also taught their skills to members in the community. These comprehensive drills have focused on incidents with hazardous materials and mass casualties. Other drills have included municipal employees from the local government⁶⁷.

In the fall of 2002, in conjunction with LAFD, members of CERT-LA organized the CERT National Conference. With representatives of CERT programs from more than seventeen states in attendance, along with Citizen Corps members, and Federal Emergency Management Agency staff, members discussed key topics such as interoperability with local city disaster plans, whether CERT programs should perform background checks, and whether to charge for classes⁶⁸. The meeting enabled CERT members around the country to collaborate together.

CERT-LA has achieved so much recognition that foreign governments have asked its members to provide advice and guidance in developing their own programs. In 2000 Jim Hawkins, a CERT instructor, received an invitation from Dr. Husan Ali Bulak to visit Turkey's Mulga District. Husan invited Hawkins because he was in need of assistance with training volunteer teams. Hawkins met with Deputy Governor Kucuk, Bulak, and the Sports Club of Nature Sports. Because the climate of Turkey is similar to LA—earthquakes and wildfires take place there as well—the government wanted to develop its own version of the CERT program⁶⁹.

What spurred the Turkish government's interest in developing its own CERT program was the fact that approximately 18,000 people died in two major earthquakes that took place in the same time period. During these disasters, due to the overwhelming stress on its first responder systems, the government could not respond adequately to all of the victims. Between the first and second earthquake local citizens took the initiative and established their own local teams. The Turkish government wanted CERT-LA to assist with integrating these volunteers into their emergency operations⁷⁰.

In addition to traveling overseas, conducting drills, and hosting conferences, members of CERT-LA have also used their skills. In May of 2003 they assisted with the municipal elections that took place. Their role was to function as the communications link between election depots and the headquarters. They used radios to communicate with each other⁷¹. On October 27th a fire broke out in the Simi Valley area. Captain Lee activated CERT-LA Battalions 12, 15, and 17. CERT members assisted LAFD by directing traffic in and out of Mason Park. They brought water and other crucial supplies to Granada Hills High School, the location of the local shelter for residents displaced by the fire. They also drove to Home Depot to pick up donated masks⁷². In 2003-2004 CERT members assisted professional first responders during the LA marathon. They assisted the runners by providing them with Gatorade, blankets, and first aid. They observed runners for indication that they might need professional. They also handled any overflow in the medical tent⁷³.

In Los Angeles the precedent is clear. CERT-LA has become an integral node in the link between government, first responders, and citizens. The program has been able to actively recruit volunteers and achieve interoperability and collaboration.

Similar Programs in Other Cities

In addition to Los Angeles and Washington, DC, many other communities have developed programs similar to CERT. They have developed initiatives to incorporate local citizens in the processes of HLS and disaster mitigation. California provides the most examples of similar programs because the state is susceptible to natural disasters such as earthquakes, mudslides, drought, and brush fires in addition to terrorism. These natural disasters require that communities in this state adopt an aggressive approach to responding to these crises.

Sunnyvale developed the Sunnyvale Neighborhoods Actively Prepare program in 1987. The infamous 1989 earthquake—the one that took place during the World Series—led to numerous similar programs being established in the rest of the Bay Area: San Francisco's Neighborhood Emergency Response Team Program, Oakland's Citizens of Oakland Respond to Emergencies Program (CORE), El Cerrito's Neighborhood Emergency Action Teams, Albany's Albany Local Emergency Teams Program, Berkeley's Citizen Emergency Response Training (CERT-Berkeley), and Novato Fire District's Homeowner's Emergency Action Response Team⁷⁴.

After the 1994 earthquake in Northridge, a group of agencies in Alameda County joined forces and created an organization called Collaborating Agencies Responding to Disasters (CARD). CARD's goal is to provide information and to collaborate together by developing joint disaster preparedness plans. In 2000 more than 250 non-profit groups worked together in CARD. CARD's network consists of geographic cluster groups that contain functional service teams. These teams provide support services to underserved populations⁷⁵.

CARD has been a success in reaching underserved populations. The organization brings emergency management to underserved populations such as the extremely disabled, foreigners, at-risk youth, and AIDS patients. CARD is part of the county's Standardized Emergency Management System. Along with the Red Cross it has representation at the Alameda County Office of Emergency Services Emergency Operations Center.

Of these programs CORE is the most comprehensive. CORE trains its members to assist and work with professional first responders in the first twenty-four to seventy-hour hours following a major disaster. Over 6,000 citizens and 7,000 employees in private industry have completed CORE. CERT-Berkeley provides basic courses in family and neighborhood disaster preparedness, light search and rescue, beginning/intermediate fire suppression, disaster first aid, and mental health⁷⁶.

The other programs provide an overview of how other communities have responded to the necessity of preparing local citizens for natural disasters and terrorist attacks. The common themes in these organizations are collaboration, organization, and communications. Each of these programs contains these aspects in their development.

Appendix C:

Acronyms

C2: Command and Control
CARD: Collaborating Agencies Responding to Disasters
CCP: Citizen Corps Program
DC CCP: DC Citizen Corps Program
CERT: Community Emergency Response Team
CERT-Berkeley: Citizen Emergency Response Training Berkeley
CERT-LA: Community Emergency Response Team Los Angeles
CORE: Citizens of Oakland Respond to Emergencies
DC: District of Columbia
DC EMA: District of Columbia Management Agency
ESF-15: Emergency Support Function #15
FEMA: Federal Emergency Management Agency
HLS: Homeland Security
IC: Incident Command
ICS: Incident Command System
IMS: Incident Management System
LAFD: Los Angeles Fire Department
MOOTW: Military Operations Other Than War
NC: Neighborhood Corps
NCO: Network Centric Operations
NCO CF: Network Centric Operations Conceptual Framework
OODA: Observe→Orient→Decide→Act
OS: Operations Section
TTP's: Tactics, Techniques, Procedures
USA FC: USA Freedom Corps

Appendix D:

Events that Author Attended

October-November 2004: CERT Training in Georgetown

December 24: NC Meeting on Safety in Urban Settings

February 17th: NC Meeting Equipment Usage at Emery Recreation Center, Georgia Avenue and Madison Street NW at 6:30 PM

February 26th: Community Emergency Management Plan (CEMP Exercises)

Future Events that Author will Attend

March 9th: Metro Corps Training at WMATA Headquarters, 600 5th Street NW

March 15th: NC Meeting on Observation at American Red Cross Headquarters

March 16th: Metro Corps Training at WMATA Headquarters, 600 5th Street NW

March 19th: CPR & AED Training at DC Fire/EMS Academy, 4600 Shepard Parkway

March 23rd: Metro Corps Training at WMATA Headquarters, 600 5th Street NW

Appendix E:

Interview, Exercise, Meeting, and Survey Response Notes

Questionnaire for Darrel Duane, CERT Instructor and Creator of CERT Trained

- 1) As the creator of the CERT-Trained web site, what do you envision the site doing for CERT members in DC?

Darrel Duane: Actually the web site is called DC-CERT.org. CERT-Trained is the List Serv. He would like to see CERT members collaborate with each other. He also runs the site for Neighborhood Corps.

- 2) Do you plan on creating a networking system on the web site that will enable members to email each other personally? How do you plan to make the site more active and to encourage more participation from CERT members?

Darrel Duane: He has a vision for people to use the site by signing on and providing contact information. He wants them to network together. He is also doing the same for the Fairfax Fire Department. He also is developing new software to better encourage and facilitate collaboration.

- 3) Do you ever envision the site having a chat room capability that enables CERT members to talk online in real time?

Darrell Duane: The CERT web site does not currently have chat room capabilities, but maybe in the far future it will have it.

- 4) What support, if any, has the DC Citizen Corps and the Neighborhood Corps offices provided you in your efforts to create this site?

Darrell Duane: None not really. Renee Evans knows about the site. Kevin Lee knows about the Neighborhood Corps site.

- 5) How do you see CERT members interfacing with professional first responders during a disaster? Do you think that they will be able to network with each other?

Darrell Duane: Do not see them working with professional first responders. Very few situations where they would actually partner and work with first responders. A very unique opportunity. Renee Evans has thought up of organizing CERT-battalions, the way they do at CERT-LA.

- 6) Do you believe that the CERT training program enables members to learn how to work together in a catastrophic disaster?

Darrell Duane: Theoretically they might, but not realistically. There is a 5% chance of them that have organized and done more than attend the training. I narrowed the question to extreme attacks, like dirty bombs. He says that CERT “provides more training than there is now”. The drill, he said, gives members a basic idea of what is “possible”.

- 7) Do professional first responders have confidence that CERT members can handle their responsibilities effectively before they arrive on the scene?

Darrell Duane: Yes, training provides something more than there is now. It at least gives citizens in their neighborhoods something more so that they have basic information to handle significant disasters.

- 8) How would you improve the CERT program so that its members could work together?

Darrell Duane: Nearest term—need to provide more training around organized neighborhoods and volunteer management. Volunteers need to have incentives to stay in the program. Duane states that a whole body of literature exists on volunteer management. CERT needs to have better volunteer recruitment and retention. He mentioned perhaps bringing in individuals who worked with nonprofit organizations.

General Comments: Very important that people take care of themselves first. CERT functions as an entry way into other programs. It gives an idea of “what is possible”. That is, he sees it as a program that teaches individuals the basic of emergency preparedness and that encourages them to learn more skills.

I mentioned the drill and he admitted that it was basic. He was in agreement with me that the drill was very basic.

I brought up the issue of Neighborhood Corps members having radios, while CERT members do not. Duane stated that Neighborhood Corps members currently do not have radios, but they will have basic ones in the future. He sees CERT coming under the umbrella of Neighborhood Corps and that organization becoming the structure that unifies CERT members together. The Neighbor Corps Groups will become teams.

Author’s Observation: As an instructor it seems to me that Duane is hinting that CERT does not have the highest caliber of volunteers right now. Between his responses I sense that he sees CERTs being unable to work effectively in a disaster before professionals like him arrive on the scene. His comments about volunteer management and recruitment are the most important observations I take away from this interview.

What it seems to me increasingly is that CERT serves as a gateway to other programs. Also it seems to me that as CERT becomes part of the Neighborhood Corps Network, confusion exists as to what is use and role actually is. This confusion is probably inherently present whenever a bureaucracy reorganizes.

So far, while the idea is for CERT to become Netcentric, in its current form it is falling short.

Questionnaire for Manager of the CERT Program

Interview to Be Held with Renee Evans on Friday February 11, 2005

- 1) How do you create the mechanisms for members of the CERT program to interact with each other?

Renee Evans: No formal mechanism; people do not like to share information. CERT is a community effort with neighborhoods that brings people together so that they can exchange information on their own.

- 2) What relationship does CERT have with the Neighborhood Corps program? What steps have you taken to network members from other Citizen Corps program (EMT Corps, Disaster Action Team, Neighborhood Watch, DC Police Reserves Crops) together?

Renee Evans: Neighborhood Corps is the main hub that links these programs together. Neighborhood Corps links volunteers. Renee has her own internal list serve that spreads information. Renee only provides information to CERT. Neighborhood Corps links together the volunteers.

- 3) What support do you offer to the CERT Trained Web site? Do you provide guidance so that members interested in maintaining this site can interface better?

Renee Evans: No connection at all to Darrell Duane's web site. He solicits their information on his own. She has no interaction with Darrel Duane.

- 4) What future plans do you have in terms of creating new and innovative methods that CERT members can use to interact together and improve their connectivity?

Renee Evans: She has always encouraged people to find CERT members in their community. Often that funnels into Neighborhood Corps. Neighborhood Corps serves this role. Also the Train the Trainer CERT course, where members learn how to teach future CERT trainings, is another method.

- 5) Do you envision CERT members taking the initiative to work together so that they can develop networks independently of your office? Or do you envision your office playing a central role in linking them together?

Renee Evans: She cites Neighborhood Corps. Her main marketing efforts include using CERT members to "spread the word". She wants them to "push the program into the community because it could go away". Issue of funding—because it is a federal program there is no guarantee that CERT will continue to receive money. But no immediate funding cuts planned. She works as a guide so that members of the community can take over. She exists primarily to provide guidance. She wants the CERT members to share the information learned in the course.

- 6) What steps do you think the DC Citizen Corps office should take to make CERT an independent network that can function effectively until professional first responders arrive?

Renee Evans: CERT not an independent network. She emphasizes continuous training so that member can keep their skills fresh.

- 7) How do professional responders relate to CERT members? Do they take ordinary citizens seriously?

Renee Evans: This question varies from jurisdiction to jurisdiction. The first CERT trainings took place in DC in 2003. In LA, where CERT began, where natural disasters such as

earthquakes are more frequent, LA CERT is much more organized. The first responder community works with those CERTs much more often than in DC. She is currently working to establish relations with first responders.

8) Other General Comments:

Renee Evans: Unique to DC, a lot of layers exist before the volunteers such as Park Police, Secret Service, DC Police, and Fire/EMS. DC volunteers do not get the opportunity to have as many exercises.

Really never had an example yet of an actual crisis where CERT members organized. She hopes that people keep their skills.

Metro has a CERT program with the DC CCP. DC was first to train all jurisdictions with Metro services.

Montgomery, Arlington, and Fairfax counties are developing their own CERT programs. All 8 Wards of DC have members of CERT.

The CERT drill is very basic, scaled down. Taking overview of six skills. Very basic.

Questionnaire for Neighborhood Corps Program Manager

Interview to Be Held with Kevin Lee on February 17, 2005

- 1) Beyond the Training Programs, what initiatives is your office undertaking to link members of all the DC Citizen Corps together since Neighborhood Corps seems to function as an umbrella?

Kevin Lee: The purpose of NC is to link volunteers of all DC CCP together. The previous director of DC CCP thought up the concept. The program started before Lee's arrival.

The program began with the NC forum, held on 8/14/04 at the DC Convention Center. Lee will email me information about the meeting. It included presentations about the volunteer programs, presentations by first responders, presentations by DHS representatives, and breakout sessions where volunteers separated by Ward to work together.

Volunteers have taken it upon themselves to organize. Chevy Chase in Ward 3 and 4 has extensive volunteer program. Ward 6 has a program.

- 2) Do you envision creating networks on the Internet or creating List Servs to connect members of all of the DC Citizens Corps programs together?

Kevin Lee: This is basically what Neighborhood Corps is doing. NC programs exist—or at least introductory meetings have been held—in Wards 1 (Adams Morgan, Mt. Pleasant, U Street Corridor, Howard University, Sliver of Woodley Park East of Connecticut Avenue), 3 (Upper Northwest above Georgetown, West of Rock Creek Park, and Chevy Chase west of Broad Branch Road), 6 (Waterfront, parts of southwest, parts of Chinatown, Capitol Hill,

Navy Yard), 7 (Far Northeast east of the Anacostia, with sliver by RFK stadium, the Kingman Park Neighborhood), and 8 (Far Southeast, Anacostia, Hillcrest, Livingston).

- 3) During the training programs, do you collect the contact information of all the members who participate so that they may be to link together and form their own networks?

Kevin Lee: Lee sends out emails to volunteers monthly. Ward #1 (Adams Morgan, Mt. Pleasant, U Street Corridor, Howard University, Sliver of Woodley Park East of Connecticut Avenue) has the List Serv that Darrell Duane created. He might be doing the same for Ward #6 (Waterfront, parts of southwest, parts of Chinatown, Capitol Hill, Navy Yard).

- 4) What initiatives do you see the Neighborhood Corps program undertaking to encourage citizens to establish their own neighborhood organizations?

Kevin Lee: Lee attends large number of community events. He talks about the program in monthly emails. He sends out emails to volunteers monthly. These emails specifically focus on Neighborhood Corps training opportunities.

- 5) Your web site states that it encourages individuals to form their own “Neighborhood Corps” organizations. What methods have you created to link these corps in various DC neighborhoods together?

Kevin Lee: No formal ways as of yet to encourage such organization. The Program has just started. Lee plans on holding information sessions to develop best practices. These information sessions will focus on members who are current and prospective Neighborhood Corps Coordinators.

- 6) Now that the grant with GW has ended, will Neighborhood Corps integrate CERT into program? Will CERT merge with Neighborhood Corps?

Kevin Lee: Programs not exactly merging. CERT is “rolling up” under NC calendar. Instead of GW managing CERT it will be managed instead by NC. It will be easier to manage.

General Comments from Lee: NC Training—focus is on trained volunteers. Volunteers of other DC CCP programs not automatically NC members. Pre-requisite for NC membership is starting to work with neighbors and then attending trainings. Then those volunteers officially are NC members.

Lee echoes the volunteer dilemma that Duane described yesterday. Very challenging to get people together. NC, CERT, and other DC CCP programs are “asking a lot” of the volunteers. The office where Lee and Evans work only has 2-3 people. People in neighborhoods are better equipped to form networks. It is the responsibility of people in their neighborhoods to work together. Large task, very difficult because people are busy.

One challenge aspect—CERT members get training, but not opportunity to use skills. CERT members used more in rural VA. Full scale drills are more expensive (Real Drill will take place in late summer). NC and CERT offices want to work with DC EMA to get DC CCP volunteers into their exercises. DC CERT packs have more material in them than other cities (JCJ aside: response to point I made about bags being incomplete). Exercise at Fire Academy is more realistic.

A communications system is in the pipeline. Lee suggests members get radios at Radio Shack that can extend 1-3 miles. NC has radios, but reserved for coordinators of NC. There is a limited supply. Tonight's session is about emergency equipment usage.

Author's General Comments:

Lee's statements indicate to me that NC is in its early stages of organizing. Funding issues seem to be hinted at when he mentioned the cost of the radios and the drill.

NC and CERT seem to be undergoing a process of reorganization together. That is, they seem to be undergoing bureaucratic change. This process seems to have brought up some issues of confusions. The boundaries delineating these programs seem to be vague.

Lee seems to be encouraging collaboration between neighbors. These meetings seem to at least be steered toward creating networks of neighbors from all the DC CCP programs to work together. Missing, though, is still a common communication system for these volunteers. While the List Serv is an excellent step forward the fact that the radio system is in a primitive state holds these organizations back should they need to deploy in a massive emergency.

Questionnaire for Members of the CERT Program—with answers

- 1) What DC Citizen Corps Programs are you a member of?

Doreen Conrad: D.C.

Susan Taylor: Dupont Circle, DC

Calloway: CERT

Thomas Carr: CERT

Sarah Potts: CERT, Metro CERT

- 2) Are you a member of CERT?

Doreen Conrad: Yes

Susan Taylor: Yes

Calloway: YES

Thomas Carr: Yes

Sarah Potts: Yes

- 3) What motivated you to volunteer for these programs? What keeps you interested in volunteering?

Doreen Conrad: On several occasions, I kept my wits about me, am quite decision, and so was able to save several people's lives. I thought I might be useful in a crisis.

Unfortunately, last year, I was dealing with a very serious family member health problem and more-or-less lost my business and, of course, income so I am rebuilding, which takes time.

Am I still interested in volunteering? I'm not sure. I had and still have a life beside, but also related to my business, and am a very active volunteer/board member/D.C. Council lobbyist. There are constant demands on my time from these activities and my new clients and CERT also has several training events/volunteer requests a week, both day and night, generally held at far-distant venues and I often feel quite pressured.

As usual, I have made many friends through the above-mentioned activities. On the other hand, anyone joining CERT to make friends would be sadly mistaken. I've never belonged to an organization where it is rare for people to hang around together before, during, or after activities or exchange at least telephone numbers/email addresses. Weird.

Susan Taylor: I am the national director of my church disaster organization

Calloway: COMMUNITY SERVICE AND INTEREST IN MEDICAL AND EMERGENCY MANAGEMENT ISSUES. KNOWLEDGE THAT AT SOME POINT THE INFORMATION AND TRAINING MAY BE USEFUL.

Thomas Carr: I am enrolled at The George Washington University's School of Engineering and Applied Science in the Engineering Management and Systems Engineering (EMSE) Department / Institute for Crisis, Disaster, and Risk Management (ICDR) pursuing a professional degree of Applied Scientist in Engineering Management (Crisis, Emergency, and Risk Management / Information Systems). I felt I should share my skills with the community

Sarah Potts: I have always enjoyed volunteering and have had an interest in emergency/disaster response. Participating in CERT has allowed me to explore this interest in a manageable way. It is great to have an opportunity to learn new things. The more you know, the more you are able to help others.

- 4) Have you participated in any of the Neighborhood Corps Trainings or CERT drills?

Doreen Conrad: Yes.

Susan Taylor: no

Calloway: AFTER BASIC TRAINING, NO.

Thomas Carr: YES

Sarah Potts: Yes, both.

- 5) Were you able to collaborate and work together effectively with other members of CERT during the drill?

Doreen Conrad: Yes.

Susan Taylor: na

Calloway: DURING THE BASIC TRAINING, YES.

Thomas Carr: YES

Sarah Potts: I thought we worked well together given that we had never met before and this was the first experience of this type for most of us.

- 6) Have you been able to network and organize with CERT, Citizen Corps, and Neighborhood Corps members in your neighborhood?

Doreen Conrad: No. There are great barriers erected to finding out who these people are and where they live. I only know the name of one person from my group because I occasionally run into her.

Susan Taylor: na

Calloway: NO

Thomas Carr: YES/NO After over a year found a neighbor interested

Sarah Potts: A few of us met in mid-January to discuss forming a Neighborhood Corps. We were hoping to find a few more members at the Community Emergency Management Plan table top exercise for our neighborhood.

- 7) Have you taken any initiative to network and interact with members of CERT and other Citizen Corps programs in your neighborhood?

Doreen Conrad: No, for the reasons described under questions 3 and 6.

In addition, I have contacted Kevin Lee, who, like all of the CERT and related staff, is hard-working, helpful, and dedicated, about getting involved with neighborhood fellow members, even those from over the border in Maryland, and he has been unable to locate anyone who's interested.

Susan Taylor: no

Calloway: NO

Thomas Carr: YES, published in Parish bulletin info about CERT training and other events.

Sarah Potts: Yes, see previous answer.

Notes from CERT Drill 12 February 2005

22-23 people said they were coming; 21 people in attendance

First they have us putting on our vests and goggles.

Not all packs everything inside of them!

The Helmets are hard to assemble; not every pack has chin straps! Mine doesn't.

First – Presentation from Washington Gas

Then Start Rotation – Fire Suppression, Medical Operations, Some Light Search & Rescue, Incident Command (IC), followed by brief Hotwash. Drill is to be very basic. DC CERT has once a year exercises.

John from Washington Gas's Compliance Division now speaks

He does not want people to go into life threatening situations.

Key is to smell—smell for gas. The principle is again the same.

The Tools work, but they do not work well. Buy a small crescent wrench.

Regular 1 ½ hr program about gas safety—provides knowledge of natural gas. Class offered by Washington Gas.

Never use lights near gas. Do not use doorbell when ringing at a house. Flammable potential. Stand off side of door when knocking.

Gas machines have regulators. About 20 pounds of gas pass through them. After passing regulator about 1/5th of pound of gas goes to appliances. The Regulator vent shoots off gas.

If the regulator is venting, let it blow. Notify Fire Department and police because you don't have proper protection and training.

Do not go into building; evacuate people out and keep them at a safe distance—approximately 1 bldg length

Natural gas dissipates well.

If Regulator is venting gas outside through a vent, it is most likely safe to turn it off on the inside.

Use gloves. ¼ quarter turn to turn off gas. If the valve is perpendicular it is off. If it is parallel and in line with the pipe it is on.

Once gas is off it stays off! Identify that you have turned off gas. Put tag. But Washington Gas no longer issues them.

I went up and tried to turn off gas but wrench did not work well!

Participants used other end of special wrench to turn off gas. They were able to turn it off through ingenuity.

If shut off switch catches fire it will melt, but it should not be a problem.

Wrench does not work well. CERT bags incomplete.

Groups then divided into 1's and 2'. We had to put our gear on.

The IC divided the group into 4 sections. Then we had our first scenario. Had to choose extinguisher. The team discussed what choice to make.

Scenario was a chemical fire in an old school with rags. Rags on fire—nearby are bottles or turpentine and paint. Group decided to exist buildings. Scenario was a card. **Renee wanted us to go through actual motions.**

Scenario not as interactive as I had hoped. More talk, not enough direct action.

Renee says to always bring packs. People did not bring packs.

Incident Command System Discussion Now. The instructor is giving the lecture. Will give overview and then talk through scenarios.

The instructor provides overview of ICS system.

1st person on the scene is the IC. People come on scene to offer assistance. CERTs come in. Then they organize. People mob streets—IC has more information. Anyone who follows on the scene should ask IC for information.

Next question: have professionals been contacted? Logistics? Setup?

Each neighborhood will come up with a plan. Let professionals know that you are a CERT Member.

CERTs are a tremendous resource. **Can help with crowd control**

Civilians can be a hindrance. Give information. Do what you have to do to keep them under control.

The instructor brings up example of Senior Citizen Center being damaged in a heavy storm. No electricity is running to it. What should we do

IC arrives. CERT member in audience says she will contact proper EMS authorities. Then she will divide people into teams—never separate teams! Teams would then divide according to ability!

Neighborhood Corps members have radios. Radios provide excellent communication!

Key questions/debate as to how members communicate. One person suggested having “two teams of runners”. Others suggested the logistics chief bring radios. Key debate about situational awareness.

The IC—responsible for giving jobs. Everything runs through the IC. Notify the IC person first.

Key point: Not netcentric in the sense that information must go to the IC. Information apparently not spread horizontally. Decisionmaking power rests with IC.

Question about not having radios. With radio it might be worthwhile to have two runners.

Other CERT member suggests sizing up building. **Perhaps CERT members could use cell phones. Might be a good idea to get radios ahead of time.**

Key point: Can Cell Phones achieve situational awareness?

People need to develop their own system of identifying IC. It is up to CERT members to organize on scene.

Key point: Missing is training on how to form organizations on the scene. IC's don't have specific marking on outfit. Could lead to confusion.

Other member suggests using the brain. Thinking through scenarios before they happen is very important.

Members suggested that manager of senior center should be IC. But in a disaster the director may not be there if it happens late at night or if he lives in Haymarket, VA.

The instructor says that IC **should stay separate because director of center in mock situation does not know ICS!**

The instructor suggests CERTs meet with director ahead of time to learn of emergency plan.

Next interactive exercise—Triage in a building after a Category 5 Hurricane.

Groups broke up into same teams as before. Task is to document, identify, victims, and put tags on victims.

Getting the flashlight and backpack materials out is very hard. Getting started is hard. The backpacks do not have the right materials. Or at least mine doesn't.

We took notes in the building, put on the tag. We then reported information to IC after operation.

Renee Evans suggests that CERT members take their own initiative to solve bag problems by purchasing missing materials on their own.

Author's Reaction to CERT Drill

The first reaction that I have to this drill was that it was not as interactive as I had thought. The “drills” were really discussions or very basic operations that took place in classrooms. They didn't have mock disaster scenes to work with. The “drill” consisted of going into rooms, reading scenario cards, and then doing operations.

But a classroom at a university really cannot substitute for a real disaster situation. Kevin Lee and Renee Evans indicated that more realistic drills take place “once a year”. They need to have them more often because this drill really is not adequate from my perspective. It does not have real damage or debris. It is too much lecture in a classroom.

The other major problem is that the CERT bags are incomplete. She said that they are “mass produced”. However, if that is the case, should CERTs need to deploy in a major attack or dangerous situation, they may not have the correct equipment to do their job. In that case they may hurt themselves and create a situation that increases the burden on the first responders, weakening the network further.

Lastly I realized that there is no formal communication system amongst CERTs. They have no walkie-talkies or any real system to achieve situational awareness. If they have to go into a building and pass information they either must return back to the IC or they have to have two teams of “runners” who would literally relay messages between each other. This process takes two team members away from

assisting victims. Furthermore, when information passes between two people, important details become muddled or they change slightly. They cannot achieve adequate situational awareness.

Thus so far it seems like CERT is really behind in terms of being Netcentric. To that end it lacks the mechanism to develop situational awareness. If the goal is to keep order and to prevent chaos from happening my initial observation is that I don't see CERT being able to do that.

Notes from Feb 17 Meeting on Radio Equipment

Conducted by The Instructor

14 people registered to attend; 7 showed up

Lee introduces the topic. NC exists to bring volunteers together. Opportunity to learn skills. Encourages people to share information.

Neighborhood Corps Pack – will go out to neighborhood corps coordinators. Next month – information sessions for coordinators (Mid to late March).

Bags have \$200 worth of stuff.

The instructor will explain use of emergency packs. We have to replenish it on our own. It is tremendous.

Class is interactive. The instructor now passes out equipment. A flashlight, crowbar, and bath wipes are on my desk.

Kevin gives me the chin strap missing from my CERT pack. He says it is “from Renee”.

The instructor asks for volunteers – he picks the shyest person.

Late arrival is asked first how she would use her equipment. She creates scenario and describes how it will be used.

The instructor teaches how to use gloves – seal of skin. In case of exposure there are agents that remove blood and urine.

He asks me what I would use that equipment. I mention shutting off gas at night.

The instructor mentions other uses of light.

He asks me to put on the Neighborhood Corps vest and identify my equipment. I mention using the crowbar. The tip of the flashlight could be used to break windows. There is also a blade in the flashlight. Blade can be used to cut rope.

The instructor says that people are looking for guidance. Vests show you know info. Thomas urges people to memorize basic emergency information.

Another participant asked how gloves could be used. She tries on the windbreaker on her desk.

The instructor says that each NC should develop symbol for IC to put on vest when called.

I bring up standardizing the symbol for the IC since having different symbols would confuse members.

Lee says it would be already confusing if NC members from different cells had to organize. He says his office has not figured it out. He also acknowledges that a number of participants in the room have great suggestions on how to deal with this issue.

Another participant agrees with me.

Triage tag shown and explained. People list information. State the condition in laymen terms. Do the best you can with what you have. Any help is still help.

Uses for rope discussed. Bridge, trying things down, tether to partner. Roping off an area.

Radio used to communicate and to achieve collaboration. Radio enables shared situational awareness.

Each NC cell establishes the frequency to use. Use radio when necessary. Keep talk down to a minimum.

Keep jargon down to a minimum.

Radios have low frequency – limited range; open to interference; other signals will come through. This might preclude shared situational awareness.

I ask about the shared situational awareness problem.

Group debates. One suggestion is to use the higher frequencies, ask FD and PD to share these frequencies. Or use runners. IC will then establish runners. Other participant suggests standardization across all NC Cells.

Another participant suggests using cell phone.

Another participant shows hazard/police line tape. Duck tape. 1000 uses, the instructor says.

Utility wrench shown. The instructor mentions Saturday CERT drill. Mentions gas demonstration. Participant says wrench is non-sparking. Only one to use on gas!!

I mention the wrench difficulties. Another participant suggests using wrenches as a torquing device.

Other participant asks about replacing parts. Thomas suggests that members replace items that are easy to get on their own.

The instructor then demonstrates the whistle. Asks about situations in which it could be used. Examples—distress, crowd control. Whistle could be used to achieve shared situational awareness.

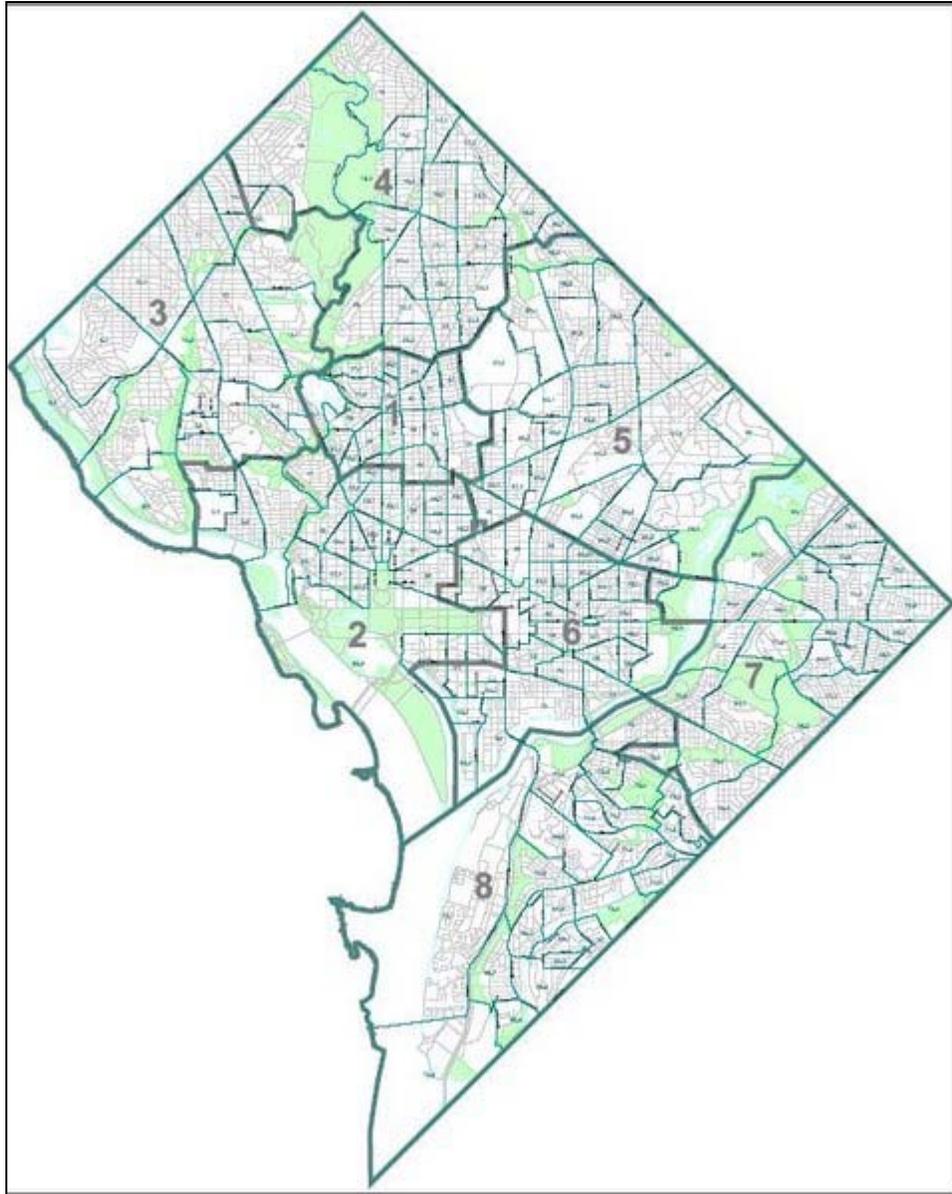
Author Comments: The key observation that I got from the NC meeting is that the system of collaboration between cells within the organization is still weak. The radio system is still in its infancy. The big issue that I see is that there is no standard system that identifies who the IC is in an emergency situation. Asking each NC cell to develop its own system to identify the IC could create confusion if several of these cells had to work together.

Clearly the problem of situational awareness is significant with this program so far. Although the program is still relatively young it is clear that it needs better mechanism to achieve improved collaboration.

Also there seems to be a problem a recruiting and retaining volunteers. Darrell Duane's comments were prescient. Given that only half of the number who signed up to attend showed up, keeping the volunteers interested and engaged is a significant dilemma. Since Kevin Lee stated that the program "asks a lot of the volunteers" it is important to understand why members volunteer.

Appendix F:

Map of Washington, DC's Wards



Source: http://en.wikipedia.org/wiki/Image:2002_dc_ward_map.jpg

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